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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/570,901 | LECHNER, THOMAS | |
| | Examiner | Art Unit | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 10/15/2010.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-16 is/are pending in the application.

4a) Of the above claim(s) is/are withdrawn from consideration.

5) Claim(s) is/are allowed.

6) Claim(s) 1-16 is/are rejected.

7) Claim(s) is/are objected to.

8) Claim(s) are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. .
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date

5) Notice of Informal Patent Application

6) Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Wachi et al. U.S. Patent Application Publication 20010049994 (hereinafter, "Wachi") in view of Clynes U.S. Patent 5590282.

Regarding **claim 10**, Wachi teaches *an apparatus for rendering* (hardware of a musical tone synthesis system, Fig. 14; see par. [0166]) *sampled data from a music file according to a transmission characteristic of a loudspeaker* (speaker, electro-acoustic converter, see par. [0047] *of a mobile terminal of a wireless communication system* [mobile phones, see par. [0147], *the apparatus comprising*:

storage means for storing the music file (standard MIDI format, see [0068], [0182]) *and data related to transmission characteristics of one or more loudspeakers* (memory 122, 124, Fig. 14 in portable phone; see [0182]),

selection means (input device 8, Fig. 1, [0047]; 108, Fig. 14, [0166]) for selecting data for a particular loudspeaker (see [0047]) from the storage means (memory 122, 124, Fig. 14 in portable phone; see [0167], [0182]),
low frequency sound identification means (pseudo low tone synthesis 60, Fig. 3; see para. [0059]) for identifying audio data in the music file (standard MIDI format, see [0068], [0182]) which represent a sound with a spectral component below a transmission frequency range of the particular loudspeaker corresponding to the selected data (is determined in accordance with a characteristic of an electro-acoustic converter of the portable phone, see [0175]),

control means (amplitude control portion 172, Fig. 19; pseudo low tone control data, see [0152], [0278]) for controlling a modification of a sound reproduction from the identified audio data such that the modified sound reproduction yields a sound spectrum having an increased energy content within the transmission frequency range of the particular loudspeaker as compared to a sound spectrum (the harmonic synthesis system, see [0158], [0283]) of an unmodified sound reproduction (see 0219, 0220); and

synthesizing means (pseudo low tone synthesis portion 60, Fig. 3) for synthesizing sampled data from a modified music file (see [0059]),

wherein the control means (amplitude control portion 172, Fig. 19; pseudo low tone control data, see [0152], [0278]) modifies the music file to provide the modified music file by replacing a specification of an instrument provided in the music file for the identified audio data with a substitute specification of an instrument having brighter

timbre and/or by transposing frequency data in the music file to a higher frequency range, i.e., (a frequency (240 Hz) higher than the lowest frequency (120 Hz) by one octave is set as the pseudo low tone start frequency, see [0272]).

However, Wachi does not explicitly disclose wherein the music file is a music score file, and wherein the control means modifies the music score file to provide the modified music file.

Clynes discloses a music information highway in which a plurality of subscribers are linked by a network to a central computer station in whose memory is stored a library of music scores (see col. 1, lines 8-12) in which the music file is the music score file (see Clynes, Fig. 1, col.4, lines 53-61).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the music information highway taught by Clynes with the apparatus for rendering sampled data from a music file of Wachi to obtain wherein the music file is a music score file, and wherein the control means modifies the music score file to provide the modified music file as claimed for purpose of rendering the music scores meaningful and expressive as suggested by Clynes in column 4, lines 10-11.

Regarding **claim 11**, Wachi in view of Clynes teaches an apparatus according to claim 10. Wachi, as modified, further teaches wherein the control means is configured to store modified audio data representing the modified sound reproduction in a music file in the storage means of the apparatus (see Wachi [0104]).

Regarding **claim 12**, Wachi in view of Clynes teaches an apparatus according to claim 10. Wachi, as modified, further teaches wherein the control means is configured to modify the sound reproduction at a time a respective music file is replayed via the loudspeaker (see Wachi [0175]).

Regarding **claim 1**, this claim merely reflects the method to the apparatus claim of claim 10 and is therefore rejected for the same reasons.

Regarding **claim 2**, Wachi in view of Clynes teaches a method according to claim 1. Wachi, as modified, further teaches wherein the instrument of the substitute specification belongs to a same category of instruments as the instrument of the specification provided in the music file (MIDI, see Wachi [0182]).

Regarding **claim 3**, this claim merely reflects the method to the apparatus claim of claim 12 and is therefore rejected for the same reasons.

Regarding **claim 4**, this claim merely reflects the method to the apparatus claim of claim 10 and is therefore rejected for the same reasons.

Regarding **claim 5**, Wachi in view of Clynes teaches a method according to claim 4. Wachi, as modified, further teaches wherein the transposition shifts the sound

spectrum of the modified sound reproduction such that the lower end of the sound spectrum of the modified sound reproduction is located within the transmission frequency range of the loudspeaker (a cut-off frequency (lowest or critical frequency) is determined in accordance with a characteristic of an electro-acoustic converter of the portable phone, see Wachi [0175]).

Regarding **claim 6**, Wachi in view of Clynes teaches a method according to claim 5. However, Wachi does not explicitly disclose wherein a main energy content of the sound spectrum of the modified sound reproduction is located within a frequency range from about 5 kHz to about 10 kHz.

Wachi further discloses the upper limit of the reproduction frequency is set to approximately 15 to 20 kHz; to the pseudo low tone waveform data 52, Fig. 3, it is good enough that the upper limit of the reproduction frequency is approximately 2 kHz (although it depends on the lowest frequency data 50), see Wachi para. [0066].

It would have been obvious to one of ordinary skill in the art at the time the invention was made, those of ordinary skill in the art when facing a design need of providing a main energy content of the sound spectrum of the modified sound reproduction is located within a frequency range from about 5 kHz to about 10 kHz would have recognized and would have been obvious to try to utilize a frequency range between "a good enough" upper limit of the pseudo low tone, i.e., 2 kHz, and the set upper limit of the reproduction frequency, i.e., 15 kHz, such that to obtain a main energy content of the sound spectrum of the modified sound reproduction as claimed since there

are a finite number of identified, predictable potential solutions (e.g., 3 kHz, 5 kHz, 7 kHz, 9 kHz, 11 kHz, 13 kHz) to the recognized need (i.e., modifying), and one of ordinary skill in the art could have pursued the known potential solutions with a reasonable expectation of success. The motivation is for purpose of easing the unpleasant sensation, as suggested by Wachi in paragraph [0176].

Regarding **claim 7**, Wachi in view of Clynes teaches a method according to claim 4. Wachi, as modified, further teaches wherein the modified sound reproduction is based on a modified parameter file (i.e., loudness of the sound; see Wachi [0220]).

Regarding **claim 8**, Wachi in view of Clynes teaches a method according to claim 4. Wachi, as modified, further teaches wherein the modified sound reproduction is based on a modified FM-spectra file (see Wachi [0283]).

Regarding **claim 9**, Wachi in view of Clynes teaches a method according to claim 4. Wachi, as modified, further teaches wherein a format of the music file corresponds to a MIDI data file format (see [0182]).

Regarding **claim 16**, Wachi in view of Clynes teaches an apparatus according to claim 10. Wachi, as modified, further teaches wherein the control means (amplitude control portion 172, Fig. 19; pseudo low tone control data, see Wachi [0152], [0278]) modifies the music score file to provide the modified music file by transposing an

entirety of the frequency data in the music score file to a higher frequency range, i.e., (a frequency (240 Hz) higher than the lowest frequency (120 Hz) by one octave is set as the pseudo low tone start frequency, see Wachi [0272]).

Regarding **claim 15**, this claim merely reflects the method to the apparatus claim of claim 16 and is therefore rejected for the same reasons.

Response to Arguments

3. With respect to rejection under 35 U.S.C. 101, claim 14 has been amended. Accordingly, the rejection is withdrawn.

4. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new grounds of rejection.

Conclusion

Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CON P. TRAN whose telephone number is (571)272-7532. The examiner can normally be reached on M - F (08:30 AM - 05:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor VIVIAN C. CHIN can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/CPT/
January 3, 2011

/Xu Mei/
Primary Examiner, Art Unit 2614